REMARKS

The undersigned requests a personal interview with the Examiner in charge of this application.

Claim 12 was objected to as being informal. The informality has been corrected.

Claims 1-5, 7-19, and 22-27 were rejected as being unpatentable over Jenney in view of Peevey.

Claims 6, 20 and 21 were rejected as being unpatentable over the above references and further in view of Gordon.

Jenney discloses an automatic meter reading system for reporting utility usage over a global information network.

Peevey has apparatus for metering electricity usage and was cited for the use of a communication device.

Gordon shows a communication network and was cited for the transmission of the utility bill to the communication device.

In the present invention, the transfer of usage data uses the existing personal computer of the user and the internet access of the personal computer. No separate network is used, as in the art of record. In addition, in the present invention, no special meter is required. A module is employed to read the existing meter. This basic idea is lacking in the art of record.

Accompanying is an Exhibit A prepared by the Applicant explaining in greater detail how the present invention differs from the art cited by the Examiner.

Independent apparatus claim 1 and independent method claim 13 have been extensively amended to recite more particularly the above described differences over the art of record.

Claim 1 as amended calls for an existing resident PC connected through a port to a module for reading an existing utility meter for receiving and storing usage information, the PC having a resident program for automatically initiating and performing data transfer via an established internet connection of the PC to a server of the utility, the program working in the background and unnoticed by a user of the PC during a login session. Support for this language appears in page 23 of the specification. These features just described are not taught or suggested by any of the art of record, or in any combination thereof.

Method claim 13 is drawn to the method involved, incorporating all of the structure recited in claim 1. This method, like the structure, is not suggested or taught in the art of record.

Claims 5, 14, 19, and 24 have been canceled and replaced by new depending claims 28 and 29. The new claims add the feature, described also in page 23, where the personal computer is accessed by the utility when the computer is on but not on line.

The remaining depending claims add details of the invention and should be allowed along with their parent claims. Claims 10 and 25 are drawn to the feature of the use of the single personal computer to monitor usage in a multiple residence building.

In view of the foregoing, it is believed that all of the claims are now drawn to patentable subject matter and should be allowed.

A conscientious effort has been made to place this application in condition for immediate allowance. The Examiner is requested to call the undersigned or Mr. Kroll if further changes are required to obtain allowance of the application.

A favorable action is solicited.

Respectfully submitted,

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Leonard Belkin

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9/23/2004, 8:33 PM, Henry CRICHLOW

JENNEY 5,897,607 and CRICHLOW 0018545

There are major and fundamental differences between these 2 patent applications that affect the claims;

Looking at JENNEY Fig. 1 we see that his AMR device 15 is first connected to a GLOBAL COMPUTER INFORMATION NETWORK (GCIN) 8 and then to the DATA ACQUISITION REPORTING PERSONAL COMPUTER (DAR) 2. This system proposed by JENNEY is completely different from the present CRICHLOW invention. In column 4 lines 15-25 JENNEY describes the implementation of his invention as a DAR connected via the PUBLIC SWITCHED TELEPHONE NETWORK (PSTN) 4 to a set of AMR devices. In JENNEY the meters as implemented must have modem devices, which are connected to a GCIN via a network card of some type, and then this GCIN transmits the data eventually to the DAR which is a modified PC at a central station. This DAR device under JENNEY is a central station which has multiple modems for communicating with the AMR devices via the PSTN and GCIN. All these devices form a typical dedicated wide area network (WAN) which is well known in the information technology circles.

The JENNEY application AMR devices behave like dedicated slave computers with major components which form a network communicating with the DAR via the GCIN using dedicated phone lines, one for each AMR device. The AMR devices or slave computers as described are dedicated solely to meter reading functions. If the GCIN is inoperative for any reason the JENNEY system is non functional since the commodity data cannot reach the central station where the DAR resides. In JENNEY, the information flow sequence is AMR, GCIN (Internet), PSTN, and DAR.

In the CRICHLOW application the AMR term used for the meter-reading module in used a generic sense. Unlike the complexity shown in the JENNEY AMR system, the AMR apparatus is a simple meter reading module behaving more like a sensor, with no major computer intelligence or built-in software as taught by JENNEY. This module sends a simple data packet or signal like a KYZ impulse to a dataport 44 of a local computer coincidentally installed at the meter location, a situation very typical today.

This computer is usually an existing PC or desktop used by the occupants of the building or residence in their regular daily work. This dataport is just like a serial port or USB or parallel port found ubiquitously on all PCs today. The data signal is transmitted locally from the meter-reading module to the PC, a distance usually a matter of feet and not requiring a PSTN but a simple signal wire very different from JENNEY. In the CRICHLOW specification, the PC can process the data packet with a resident data-logging program and store the data on the PC storage media at the resident location. The data is available for further transmission to the utility at any time and it is then sent as described in the application from the local PC to the utility. In this application the PC behaves like a temporary repository of the raw data on its way to the utility computers and the meter reader module behaves like an input device. Since the data is stored on the hard drive or other storage media of the local PC after is data-logged then the PC can optionally behave as a temporary backup for the meter data for the utility company.

In the CRICHLOW application, the information flow sequence is as follows: meter reading module, wired or wireless connection, local PC dataport, Internet, central utility system. The PC in the CRICHLOW patent application is normally online at the resident or local site where it is primarily performing a host of regular tasks unrelated to meter reading and the simple meter reading device interacts only via the dataport with minimal secondary effect or load on the PC system. In effect, this meter-reading device, unlike the fully operational JENNEY slave computer, behaves just like any other small I/O or data-acquisition device connected to a desktop computer today. The meter reading device is thus "piggy-backing" on the overall operation of the local PC as a simple peripheral device. This is a major distinction from JENNEY in which the AMR is a full-fledged standalone computer slave system.

In addition:

JENNEY needs dedicated phone lines from AMR to DAR.

CRICHLOW uses an available dataport, serial, parallel, USB etc to connect the meter reading module to the PC with a simple signal wire or wireless connection over a short distance measured in feet

JENNEY needs a GCIN to go from the AMR to DAR.

CRICHLOW needs no dedicated phone lines but uses a wired or wireless connection from the meter reader module to the local PC.

JENNEY needs a dedicated DAR to process the meter data.

CRICHLOW uses existing PC at local installation – resident or commercial not a dedicated "slave" computer.

CRICHLOW "piggy backs" on ongoing PC operation at local site without materially affecting the local PC operation.

JENNEY needs a modem in the AMR.

CRICHLOW needs NO modem at meter reading module but uses a short wired or wireless connection to transport the meter signal to the PC at the local meter site, resident or commercial.

JENNEY – the AMR device is separate from utility meter.

CRICHLOW the meter-reading module is installed under the meter glass.

JENNEY the AMR device is a complex electronic device with an ftp server and with a router 33.

CRICHLOW needs no router or ftp server in its simple meter-reading module.

JENNEY needs 2 emails addresses as a means of communication between the DAR and the AMR device. One for the AMR and another unique email for the DAR.

CRICHLOW needs no email addresses for communication in its meter-reading module

JENNEY stores and processes all data at the central DAR.

CRICHLOW optionally stores all data locally at PC of resident at the meter site and later transfers it to utility location.

Additionally:

CRICHLOW uses "off the net" technology implementation as a means of awakening the local system to respond to the central utility system.

CRICHLOW the meter reading module is a small simple sensor with an under-the-glass implementation, using wired or wireless connections and the module can be screw mounted.

Integral Unit (JENNEY) vs Separate unit (CRICHLOW) discussions:

There are distinct technological, engineering and non-obvious advantages to having the AM module separate from the communication and storage system as discussed in the CRICHLOW patent application. These advantages are non-obvious and generally not known to industry professionals who are not fully acquainted with both the growth of Information Technology in the energy utility industries and associated development in electronics needed to implement these new technologies in current utility operations.

As taught by CRICHLOW the AM module being separate, can be designed and inexpensively manufactured as a separate sensor-module which can be custom designed for installation in the various types of basic utility meter systems without having to redesign the more complicated AMR communication and storage system with their attendant costs and complexities. Under the CRICHLOW embodiment, a generalized AMR system can be interfaced with various sensor-modules more efficiently than building, warehousing and installation of different complete integral AMR units with communication, CPU and storage components as proposed by JENNEY. The integral system taught by JENNEY does not address this need as detailed by CRICHLOW. In a large number of cases, especially at older meter locations, integral unit construction can be a detriment to utility operational functionality since the cost of replacing a complete meter becomes prohibitive whereas the simple AM module proposed by CRICHLOW can be easily and inexpensively field installed without a major technical and economic expenditure.

The "means of" specific implementation in the applications are different, thereby making the applications different:

In counting and detecting pulses;
CRICHLOW on page 4 [0093] uses an Optical Pulse device as a means of pulse determination in the meter-reading module. In claim 1 JENNEY uses dry contact closure terminations to detect and count pulses. These are different implementations.

In conversion of pulses to commodity usage;
JENNEY uses an obvious "means of";

In claim 1, JENNEY claims a means of conversion of pulses to commodity usage; this conversion is simple arithmetic and is based on a single constant number and is so obvious, non-novel and trivial to the industry that on each meter in the field, this conversion constant is posted.

PEEVEY 2002/0091653

Under CRICHLOW the meter-reading module 32 reads data from an existing meter. It does not replace the meter as taught by PEEVEY. It operates as an add-on or an adjunct to the meter. It is a small sensor-like module, which senses the inputs or KYZ signals on each revolution of the meter and collects and transfers this data via wired or wireless systems to an already existing PC apparatus adjacent to the meter installation location. This meter-reading module is neither a meter nor a meter system in the accepted sense of the industry.

Contrary to the CRICHLOW embodiments, PEEVEY in page 4 [0031] of his application refers very broadly to an automated meter, which to operate, has to be installed at the site by either replacing any existing meter or as a completely new meter at a new site. Automated meter systems as described by PEEVEY are usually considered by those knowledgeable in the industry to be large "black boxes" with built-in communication systems that provide many functions but are costly to install and to operate. The electronic meters as described by PEEVEY usually do not use KYZ signals to determine commodity use as is customary in less sophisticated utility meters but have their own electronics and logic circuitry to compute energy and other commodity factors.

PEEVEY teaches AM systems not modules as taught by CRICHLOW in his specifications on page 4 [0093] where a module that is held in place inside the glass is described. Any one knowledgeable instantly realizes the difference between a sensor-like module under glass as described by CRICHLOW which at most weighs a few ounces, and an automatic meter as described by PEEVEY in page 3 [0035] and by his example the VECTRON meter page 3 [0037] which grosses in at 15.8 pounds is 7.3 inches deep and 6.9 inches tall, according to the published manufacturer's data (Schlumberger at www.slb.com/rms). The structure and methods taught in these applications are completely different and these differences are easily recognized by those knowledgeable in the field.

General

"Patents have relied for years on a "means-for" clause which allowed an inventor to patent a way of doing something and then claim a broad application of that technique. A string of court decisions in recent years have largely limited the "means-for" clause to only cover the specific implementation of an idea listed in the patent."

PEEVEY on page 5 [0053] broadly asserts but does not describe the billing system or payment system specifics or its implementation in his invention. In Figs, 5 and 13 and page 5 [0101] CRICHLOW teaches and details specific implementation means for effecting bill payment and monitoring and follow-up procedures of his invention where the methods and means of effecting bill payment are detailed using the internet as a facilitating network.

GORDON: 4,713,837.

Proposes a communications network, column 1[65], which uses a general all-purpose receiver installed at each meter location and which listens to specific public broadcasts for instructions. In column 4[45-50] the broadcast signal is superimposed on a public broadcast channel and in column 2[20-25] the receiver filters the received signal to determine what instructions have been sent. Under GORDON's broad assertions, the receiver can be programmed to perform a myriad of operations from alarms, smoke detection to flood control

Problems associated with this application:

To anyone of ordinary skill in broadcasting technology, there are major problems associated with the GORDON application with respect to the ability to operate in the industry as a system as described in the application. The most severe problem is the need as proposed by GORDON in 4[45-50] to broadcast to a plurality of unique receivers over the public broadcast bands.

It is well known in the communications world, you either use Time Division Multiplex, TDM, or Frequency Division Multiplex FDM. TDM would be your T1 and SONET, FDM is all of the AM, FM, and TV broadcast. If it's TDM, each device takes turn (in time) to transmit/receive, and occupies the entire frequency spectrum. So the time is sliced up. In FDM, each device transmits using a unique frequency, but occupies the entire time.

In short, communications systems either use TDM or FDM to squeeze multiple signals/devices into a finite resource (e.g. spectrum, bandwidth), but not both, because of intrinsic limitations. If a public broadcast system were used for the power meters, as proposed by GORDON, this would be an FDM system. A related problem with wireless systems (as opposed to cable TV) such as radio is that a sufficient separation between each transmitting unit is required in order to prevent aliasing and interference. For example, for FM radio, even though most digital FM tuners can tune to odd separations (e.g. 94.3, 94.5, 94.7 MHz), each station is required to be separated from each other by at least 0.4 MHz. In other words, you will never find a 94.3 next to a 94.5 station, unless one is an illegal underground station. This makes a finite spectrum even more precious because of the spacing requirements (and spectrum is money).

Since GORDON is relying on the public broadcast system for communication with the meters this would be severely limited by the available public spectrum especially when the number of units involved more than a few meter units. The utility industry is large by any measure, utilities have between several thousand and several million meter units installed and a simple computation show that there is not enough spectrum available to give each a unique communication pathway from the transmitter to the meter receiver.

Furthermore, on air public broadcasts usually use a single broadcast frequency provided by the Federal Communication Commission (FCC) and since GORDON teaches unique addresses and codes for each meter, each address must be sequentially transmitted. Communicating 1,000,000 separate signals, (a typical utility population) to unique receivers can be time consuming. Consider 1 second per broadcast at best we are looking at about 12 days to send out all the meter signals to each individual meter. There is an additional need for specialized signal processing and decoders to recognize, authenticate, verify the address, verify the commands and

respond functionally to the commands at the receiver location, the "means of" which are not specified by GORDON in his application.

It is obvious to those knowledgeable in the field that the "means of" implementing the communication between the utility and meter may be possible but it is limited to a range of very small field applications.

Also GORDON broadly states in 5[55-60] that his network can by addition of equipment be capable of electronic billing. No specification of the means of implementing this electronic billing is taught.

ROOS 5699276

Provides for a digital service network (DSN) operating inside the house and connected to a major Digital Signal Processing (DSP) computer which is commissioned and fully accessorized with a compliment of video, audio, modem, descramblers, and electronic devices to behave as a PC. This DSP computer is networked to the utility meter and thus by virtue of this connection and association provides the meter with the intelligence needed to communicate with the outside world. In ROOS the combined unit is now a modified utility meter.

The invention taught by ROOS as a "means for" accessing the internet is not only unrealistic to those knowledgeable in the filed but it is dangerous, unsafe and illegal in certain jurisdictions. In column 5 [10-20] ROOS teaches housing the power and phone wires together, besides being intrinsically unsafe there is a lot of interline electronic signal interference which precludes any reasonable signal transmission. Furthermore, access to the Internet under ROOS is implemented in col 8 [40-45] by using the DSP computer provided by the meter along with the TV at the location as a display.

There is no specific method that ROOS implements to show the means for bill processing except for a broad generalization in Col 7 [40-45] that the "utility can provide programming to make it easy for the customer to pay their bills each month". In such a broad statement it is possible that the bills can be paid in any known manner. It is clear to anyone skilled in the art that using an expensive digital signal processing system as an interface at a simple mechanical electric meter is a technical equivalent of hitching a

rocket ship to a canoe as a means of transportation across a river. The typical electromechanical utility meter is a very inexpensive device normally costing about $30 and as compared to the high level of expensive electronics taught by ROOS to be included in a his fully configured DSP computer. The DSP has sufficient electronics on its own which can be easily modified by anyone skilled in the field to perform all the additional functions of power metering with little additional expense, such that a meter is no longer needed. ROOS has essentially replaced the meter by a major expensive and sophisticated electronic device while still keeping the utility meter attached to the house.

BURKE 2003/0158826.

Provides a decision-making methodology to optimize power consumption, purchasing and generation and uses the Internet as a research source to gain pricing data, weather data, fuel data and consumption data published therein.

BURKE does not show or nor does he explain the specific means for the implementation of his invention over the Internet. Broadly, he states in Column 1 [0010] for example the Internet is used to find pricing information, in column 3 [0033] the Internet is used for usage and billing information. Nowhere is an implementation showing specific means of implementation. It is obvious to anyone in the field today that the internet can be used for a myriad of functions, a higher level of specific implementations are need to claim its use in a specific activity.

CARPENTER 2001/0039537

Develops a massive business model integrating utility functions in which an AMR with network-enabled utility meters and allied services via networks are provided. One of these networks is the Internet.

CRICHLOW

1. The meter-reading module is small sensor-like device, installed inside the meter, not replacing the meter

2. Non integral construction – has a separate simple meter reader device unit connected to a shared PC. Non-integral embodiment allows a means for several different types of utility meters to be connected by varying the types of meter modules without changing the communication and storage system units which are separate.

3. This method allows "Piggy back" operation on existing PC at meter site location for data logging.

4. Means for implementing AM system is a meter reading module "under-the-glass" connected to an existing PC and running in "background" operations.

5. Means for communication is the Internet network using "off the net" technology to awake the PC from the central utility station.

6. Method wherein the meter reader module is a data acquisition apparatus connected to a serial, USB, parallel, or other input port of the PC.

7. Means for counting pulses using an optical pulse device coupled to a dataport on an existing PC at the meter site.

8. Method where the meter reading module does not replace the meter but is an add-on to an existing or new meter.

9. Means where the apparatus is small in size and can be easily installed under the glass of the existing meter.

10. Means for implementing the billing system via the Internet which provides for monitoring and bill follow-up operations.